



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,775	11/16/2001	Michael Bazylenko	CU-2649 RJS	9388
7590 12/05/2003			EXAMINER	
Richard J Streit Suite 1200 224 South Michigan Avenue Chicago, IL 60604			WOOD, KEVIN S	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 12/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/936,775	Applicant(s) BAZYLENKO ET AL.	
	Examiner Kevin S Wood	Art Unit 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-24 is/are allowed.
- 6) ☒ Claim(s) 25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

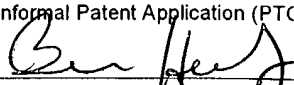
Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>8</u> . | 6) <input type="checkbox"/> Other:  |

DETAILED ACTION

Response to Amendment

1. This Office Action is responsive to the Applicant's Amendment filed on 8 August 2003. Claims 1, 5, 7, 9-12, and 17 have been amended. New claims 22-25 have been added. Claims 1-25 are now pending in the Application.
2. Based on the Applicant's Amendment the objections to claims 5-19 under 37 CFR 1.75(c) as being in improper form, because of multiple dependent claims cannot depend from multiple dependent claims, have been withdrawn.

Response to Arguments

3. Applicant's arguments filed 8 August 2003 with respect to claims 1-4 have been fully considered but they are not persuasive. The applicant's primary argument is that Foresi (US 5,841,931) does not disclose a waveguide comprising amorphous silicon. The examiner agrees with this point, however, claims 1-4 are directed to a method of forming a waveguide structure, with a single step of forming a silicon-based waveguide on a substrate by depositing a waveguide layer comprising amorphous silicon onto the substrate. Foresi clearly discloses a method for forming a waveguide structure including a step of forming a silicon-based waveguide on a substrate by depositing a waveguide layer comprising amorphous silicon. The applicant appears to be arguing limitations that are not within the claim.

The applicant has amended the claim 1 to include the limitation that the amorphous silicon layer is deposited on the substrate by chemical vapor deposition

Art Unit: 2874

(CVD). Foresi does not specifically disclose that CVD is utilized to deposit the amorphous silicon. Claims 1-19 are allowable over Foresi for this reason.

4. Applicant's arguments, filed 8 August 2003, with respect to claims 21-24 have been fully considered and are persuasive. The rejection of claim 21 has been withdrawn.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 25 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 25 is a new claim that contains a negative limitation that was not part of the original specification. The examiner could not find any disclosure for the limitation of the amorphous silicon waveguide layer being deposited by a process that does not utilize ion bombardment of a target material in the original specification. The MPEP is clear that when a negative limitation does not have a basis in the original disclosure, a rejection under 35 U.S.C. 112, first paragraph, should be made.

The mere absence of a positive recitation is not basis for an exclusion. Any claim containing a negative limitation which does not have basis in the original disclosure should be rejected under 35 U.S.C. 112, first paragraph as failing to comply with the written description requirement. Note that a lack of literal basis in the specification for a negative limitation may not be sufficient to establish a prima facie case for lack of descriptive support. *Ex parte Parks*, 30 USPQ2d 1234,1236 (Bd. Pat. App. & Inter. 1993).

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claim 25 is rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6, 5,841,931 to Foresi et al.

Referring to claim 25, Foresi et al. discloses all the limitations of the claimed invention. Foresi discloses a method for forming an optical waveguide, including: forming a silicon-based waveguide on a substrate by depositing a waveguide layer comprising amorphous silicon onto the substrate, where the waveguide layer has a refractive index which is greater than the refractive index of the substrate. Foresi et al.

does not disclose the use of ion bombardment of a target material. See Fig 1-2, along with their respective portions of the specification.

Allowable Subject Matter

9. Claims 1-24 are allowed.

10. The following is a statement of reasons for the indication of allowable subject matter:

Referring to claims 1-19, the prior art does not disclose the combination all the limitations of the claimed method. Specifically, the prior art does not disclose a waveguide structure being formed by depositing an amorphous silicon waveguide layer on a substrate using chemical vapor deposition (CVD).

Referring to claim 20, the prior art does not disclose the combination all the limitations of the claimed method. Specifically, the prior art does not disclose the step of oxidizing the silicon-based waveguide in an end portion so as to facilitate optical coupling of the waveguide and an end of an optical fiber, the oxidation altering the refractive index profile of the waveguide.

Referring to claims 21-24, the prior art does not disclose the combination all the limitations of the claimed invention. Specifically, the prior art does not disclose an optical device incorporating an amorphous silicon-based waveguide layer integrated with a processing element.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,533,907 to Demaray et al.

This reference discloses an optical waveguide formed on a substrate depositing an amorphous waveguide layer by a sputtering technique. This reference teaches away from the use of CVD for forming waveguides.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin S Wood whose telephone number is (703) 605-5296. The examiner can normally be reached on Monday-Thursday (7am - 5:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B Bovernick can be reached on (703) 308-4819. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 307-0956.

KSW


Brian Healy
Primary Examiner